

Chapter 4

ULTRA66 DRIVER

4.1 Introduction

The Ultra66 controller provides two IDE hard drive connectors that support Ultra ATA/66 protocols, perfect for such demanding applications as real-time video, multimedia, and high-performance operating systems.

Ultra66's two IDE connectors each support a master/slave combination of any IDE devices, including IDE, EIDE, Fast-ATA, and Ultra-ATA standards. Devices of different standards can be connected to Ultra66 without performance degradation, due to the independent programmable timing registers in the controller's design.

4.2 Software Installation

This section details the Ultra66 driver installation procedure when used with various operating systems. You can install from CDROM driver or **copy it to disk from CDROM**.

4.2-1 Installing Drivers During Windows 95/98 Installation

The following three sections detail the installation of the Ultra66 drivers while installing Windows 95/98 (with the Ultra66 controller card already in place). If you're installing the Ultra66 drivers on a system with Windows 95/98 already installed, see "Installing Drivers with Existing Windows 95/98".

4.2-1-1 Windows 95/98

- Step 1:** After installing the Ultra66 controller and configuring the hard drives, partition and format your hard drive(s), if necessary.
 - Step 2:** Install Windows 95 normally.
 - Step 3:** After installation, go to the "Start" menu and choose "Settings."
 - Step 4:** From the "Settings" menu, choose "Control Panel."
 - Step 5:** In the "Control Panel" window, double-click on the "System" icon.
 - Step 6:** In the "System" window, choose the "Device Manager" tab.
 - Step 7:** In the hierarchical display under "Other Devices" is a listing for "PCI Mass Storage Controller." Choose it and then press the "Properties" button.
 - Step 8:** Choose the "Driver" tab in the "Properties" window, and then press the "Update Driver" button.
 - Step 9:** Insert the "Ultra66 Driver" into the CDROM driver.
 - Step 10:** In the "Select Hardware Type" dialog box, highlight "SCSI controllers," and then press "OK."
 - Step 11:** In the "Select Device" dialog box, choose "Have Disk."
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Step 12: Look for the Ultra directory in the box and press “OK”. A message informing you that windows has found the “Promise Technology Inc., Ultra66 IDE Controller” should appear.

Step 13: Press “Yes” when asked if you want to restart your computer.

4.2-2 Windows NT

If you’re installing Ultra66 under Windows NT 3.51, create a floppy disk titled “Windows NT 3.51 Ultra66 Drivers.” Copy the following files onto the root directory of the diskette: TXTSETUP.OEM and “OEMSETUP.INF” from the “NT351” directory of the “Ultra66 Driver” diskette; and “ULTRA66.SYS” and “DISK1” from the root directory of the “Ultra66 Driver” diskette. When prompted for drivers during the installation of Windows 3.51. insert this diskette in drive A:.

Under Windows 4.0, insert the “Ultra66 Driver” diskette in drive A: when prompted for the drivers.

4.2-2-1 Installing Drivers During Windows NT 3.51/4.0 Installation

Step 1: Start the system installation by booting from the Windows NT disk:

- a. Floppy install: boot the system with the Windows NT installation diskettes.
- b. Floppyless install: boot from floppy and type “WINNT/B”. After files have been copied, the system will reboot. On the reboot, press the “F6” key when the message “Setup is inspecting your computer’s hardware configuration...” appears.
- c. CD-ROM disk install: boot from the CD-ROM disk and press the “F6” key when the message “Setup is inspecting your computer’s hardware configuration...” appears.

Step 2: When the “Welcome Setup” window is generated, press “Enter.”

Step 3: In the “Setup Method” dialog box, press “Enter” to confirm “Express Setup.”

Step 4: Press “S” to configure an additional adapter.

Step 5: Select “Other,” and then insert the “Ultra66 Driver” diskette (for Windows NT 4.0) or the “Windows 3.51 Ultra66 Drivers” diskette (for Windows NT 3.51; see “Windows NT” for more details) into drive A:.

Step 6: Specify “A:,” and then press “Enter. Follow the normal installation procedure.

4.2-2-2 Installing Drivers with Existing Windows NT 3.51

Note: Hard drives should not be connected to the Ultra66 controller connectors before performing the following procedure. The Ultra66 drivers must be loaded on the system hard drive (running under the existing hard drive controller) before any hard drives are connected to the Ultra66 controller connectors.

- Step 1:** In “Program Manager,” double-click on “Windows NT Setup” in the “Main” group.
- Step 2:** In “Windows NT Setup,” select “Options,” and then choose “Add/Remove SCSI Adapters...”
- Step 3:** In “SCSI Adapter Setup,” press “Add...”
- Step 4:** In “Select SCSI Adapter Option,” select “Other (requires a disk from a hardware manufacturer)” in the “Adapter:” dialog box.
- Step 5:** The “Insert Diskette” box will appear. Insert the “Windows NT3.51 Ultra66 Drivers” (created from the “Ultra66 Drivers” diskette; see “Windows NT” for more details) diskette into drive A: and type “a:\” in the dialog box.
- Step 6:** The “Select OEM Option” dialog box will appear. Select “Promise Technology, Inc., Ultra66 Controller,” and then press “OK.”
- Step 7:** The “Select SCSI Adapter Option” will appear. Press “Install.”
- Step 8:** After successfully installing the driver, the “SCSI Adapter Setup” dialog box will show that the “Promise Technology, Inc., Ultra66Controller” has been installed.

4.2-2-3 Installing Drivers with Existing Windows NT 4.0

Note: Hard drives should not be connected to the Ultra66 controller connectors before performing the following procedure. The Ultra66 drivers must be loaded on the system hard drive (running under the existing hard drive controller) before any hard drives are connected to the Ultra66 controller connectors.

- Step 1:** Choose “Settings” from the “Start” menu.
- Step 2:** Choose “Control Panel” from the “Settings” menu.
- Step 3:** Double-click on the “SCSI Adapters” icon, which generates the “SCSI Adapters” dialog box
- Step 4:** Choose “Drivers,” and then press “Add.”
- Step 5:** In the “Install Drivers” dialog box, press “Have Disk...”
- Step 6:** When the “Install From Disk” appears, insert the “Ultra66 Driver” diskette in drive A:, and then choose “OK.”
- Step 7:** When the “Install Driver” dialog box appears, select “Promise Technology, Inc., ULTRA66 Controller” and then press “OK.”
- Step 8:** When the “Select SCSI Adapter Option” dialog box appears, press “Install.”

Note: After a successful installation. The “SCSI Adapter Setup” box will show that the “Promise Technology, Inc., ULTRA66 Controller” driver has been installed. Power off your system, and then attach the hard drives.

4.2-3 Troubleshooting

PROBLEM:

The following warning appears in the Ultra66 BIOS: “[WARNING] BE-CAUSE OF 40-CONDUCTOR CABLE(S) USED, Dx WOULD BE DOWN TO ULTRA33 MODE. PLEASE USE 80-CONDUCTOR CABLE(S) IF ULTRA66 WANTED”.

SOLUTION:

A 40-wire, 40pin IDE cable is being used with an Ultra-ATA/66 capable hard drive in the Ultra66 hard drive setup. To access Ultra66 timing (and take advantage of the full capabilities of your Ultra-ATA/66 hard drive). you must use an 80-wire, 40-pin IDE cable. One 80-wire, 40-pin cable is included with the Ultra66 package; if you wish to connect a second Ultra-ATA/66 hard drive to the Ultra66 controller card, you must purchase another 80-wire, 40-pin cable. The colored edge of the cable(s) indicates pin 1, and the blue cable connector must be attached to the Ultra66 connector.

PROBLEM:

Determining hard drive performance.

SOLUTION:

During the Ultra66 BIOS, the maximum transfer rate timing of the hard drive(s) connected to the Ultra66 controller card will be displayed next to the model name of the hard drive. Example: “DO QUANTUM FIRE-BALL CR8.4A LBA 8056MB ULTRA DMA 4.” “DO” identifies drive 0 (master drive on the primary IDE port on the Ultra66 controller card); “QUANTUM FIREBALL CR8.4A” represents the model name/number; “LBA” signifies that the drive size is being translated so that the system can make use of the drive’s full capacity; “8056MB represents the drive’s capacity; “ULTRA DMA 4” identifies the maximum transfer rate. Slower transfer rates include: “ULTRA DMA(0, 1, or 2)”; “DMA(0, 1, 2, or 3)”; “PIO(0, 1, 2, 3, or 4).” To make full use of the performance enhancements of Ultra66, use only Ultra DMA 3 or Ultra DMA 4 drives.

PROBLEM:

While booting Windows NT during a floppyless install (see “Installing Drivers During Windows NT 3.51/4.0 Installation”), the message “Inaccessible Boot Device” appears.

SOLUTION:

The “F6” key was not pressed at the appropriate time. Reboot the system, and press the “F6” key when the message “Setup is inspecting your computer’s hardware configuration...” appears.

PROBLEM:

While booting Windows NT during a CD-ROM disk install (see “Installing Drivers During Windows NT 3.51/4.0 Installation”), the message “No Hard Drives Found” appears.

SOLUTION:

The “F6” key was not pressed at the appropriate time. Reboot the system, and press the “F6” key when the message “Setup is inspecting your computer’s hardware configuration...” appears.

PROBLEM:

System contains corrupted data and /or experiences intermittent lock-ups.

SOLUTION:

System CPU may be overclocked. Ultra66 does not support overclocking. Also, be sure that the PCI bus clock is set to 33MHz.